

**Re: RfD data Fitting Results to date**

**Bob Benson** to: Brattin, Bill

09/14/2010 02:28 PM

From: Bob Benson/R8/USEPA/US

To:

---

I couldn't see how latency was incorporated.

I ran benchmark dose analysis (version 2.10) using groups of 50. No models fit when all exposure groups were included. There is a 10 fold difference in exposure between the two top groups and almost no increase in prevalence for discrete pleural thickening. So there is clear evidence of a plateau at high exposure. The cumulative prevalence versus cumulative exposure plot shows the same plateau.

Here are the plots.

When I ran the BMD analysis omitting the top exposure, the log-logistic, gamma, multistage, and Weibull all provided adequate fits. The log-logistic gave a somewhat better fit and the BMD = 0.101047 and BMDL = 0.0535913. The log-logistic was done with slope restricted.

As you know the BMD software does not allow including the latency variable.

Here is the bmd printout. I think this result looks reasonable. The background estimate is 0.07. The lowest exposure group had a response of 0.06 (3/50).

How would a run with your model compare to this BMDL?

-----"Brattin, Bill" <brattin@srcinc.com> wrote: -----

To: Bob Benson/R8/USEPA/US@EPA, David Berry/R8/USEPA/US@EPA

From: "Brattin, Bill" <brattin@srcinc.com>

Date: 09/14/2010 01:44PM

Subject: RfD data Fitting Results to date

Here are my results to date.

It seems the best fit is a log-logistic model where the exposure metric is cumulative exposure x latency.

The real problem is the data do not extend down enough to clearly see what the bottom of the curve looks like.

Also, the prevalence in the high dose groups are lower than expected based on extrapolation from the lower groups, almost as if there were a plateau.

I assume that is not real, and is just due to random variation in the data.

If we were to proceed with a log-logistic model, the POD will be very low, and will depend strongly on what we assume or specify about the "baseline" condition.

\*\*\*\*\*

Bill Brattin  
SRC, Inc.  
999 18th Street Suite 1975  
Denver CO 80202  
Phone: 303-357-3121  
Fax: 303-292-4755  
e-mail: [brattin@srcinc.com](mailto:brattin@srcinc.com)

[attachment "BMDS Stats.xls" removed by Bob Benson/R8/USEPA/US]  
[attachment "BMDS Graphs.doc" removed by Bob Benson/R8/USEPA/US]  
[attachment "BMDS parameters.xls" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 8.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 1.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 2.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 3.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 4.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 4a.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 5.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 5a.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 6.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 6a.pdf" removed by Bob Benson/R8/USEPA/US]  
[attachment "Model 7.pdf" removed by Bob Benson/R8/USEPA/US]



- Graphics Files for RfC.xls



- Inl\_LA Groups of 50\_Opt.out